AMENDED SPECIFICATION

Replace Amend the following paragraph which was added by Applicants' amendment dated October 5, 2001 to page 6, line 8, of the Specification immediately following the sentence ending with "into the catalyst bed to different depth.".

An embodiment of the invention is directed to a fixed bed reactor 6 for reacting a feedstock. The reactor 6 comprises a fixed catalyst bed 5 and a bypass device positioned or disposed within the fixed catalyst bed 5. The bypass device comprises a first elongated hollow member (also referred to as a "cage member" or "cage") 2 having a top wall, side walls, a bottom wall and a plurality of apertures or openings disposed generally near a lower end or section of cage 2. The bypass device further comprises a second elongated hollow member 1 disposed within cage 2 and protruding or extending through the top wall of cage 2. The second elongated member 1 extends above the catalyst bed 5. The cage member 2 has an upper enclosed portion (top wall and upper portion of the side walls) 3 and a lower perforated portion (bottom wall and lower portion of side walls) 4. Optionally, the second hollow elongated member 1 may have a cap 7 over the end or portion of member 1 that extends above the catalyst bed 5. The Figure also shows an optional layer of inert material 8 disposed within the catalyst bed in which the bypassed material is distributed. The first and second elongated hollow members may be tubular members with the first elongated hollow member 1 positioned or disposed within the second elongated hollow member as shown in the Figure. In operation, the bypass tube receives a portion of the feedstock and directs it into the cage where it is discharged through the openings of the cage into the catalyst bed 5.

AMENDED SPECIFICATION (continued)

Replace the paragraph beginning at page 7, line 15, with the following rewritten paragraph:

D2 One or more bypass apparatus may be utilized in any given bed. The cage member may extend through the catalyst bed to the same or different depths within the beds bottom layer. The bypass apparatus of the present invention employs an elongated member or tube disposed within a substantially larger cross-section, perforated cage member, as shown in the sole drawing of the application, to maintain the catalytic bed integrity and prevent the high exit velocities of the second elongated member from eroding the bed or causing the bed to slump, increase pressure drop, and deteriorate unit performance.

AMENDED SPECIFICATION (continued)

Replace the paragraph beginning at page 8, line 1, with the following rewritten paragraph:

catalyst bed is clean and no foulants have deposited at the bed top, a majority of the flow will go through the catalyst bed instead of the bypass apparatus. This is because the bypass apparatus, particularly the second hollow elongated member, typically tubes, are sized to have a significantly high pressure drop relative to the clean bed, and the flow takes the path of least resistance. The second hollow elongated members are typically sized to provide a pressure drop of a factor of about 5 to about 50 times or of about 5 to about 25 higher relative to the clean bed. As the bed top fouls during operation, the resistance to flow through the bed increases, and an increasing fraction of the flow is bypassed through the bypass apparatus. Thus, the second hollow elongated members, typically tubes, are sized to have a flow resistance which is significantly higher than the flow resistance of the clean bed. As an example, the pressure drop through a clean (unfouled) top four feet layer of the catalyst bed would be typically 0.5 to 2 psi in a typical hydroprocessing reactor. Depending upon the operation, the bypass tubes will be sized to have a flow resistance of about 10 to 50 psi with total flow in the tubes. With this bypass arrangement, the pressure drop through the top four feet section of the bed will never exceed 50 psi. If the bypass tubes were not used, the pressure drop could be significantly higher than 50 psi upon fouling which would necessitate a reactor shutdown or throughput reduction.

D3